



# DPT-4001

*Differential Pressure Transducer*

*Operation & Maintenance Manual*

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*Engineered for accuracy, applicability,  
durability and simplicity*



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# 1. INTRODUCTION

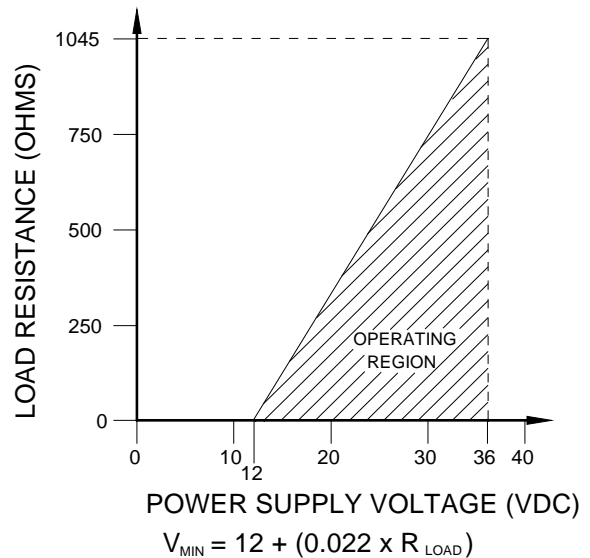
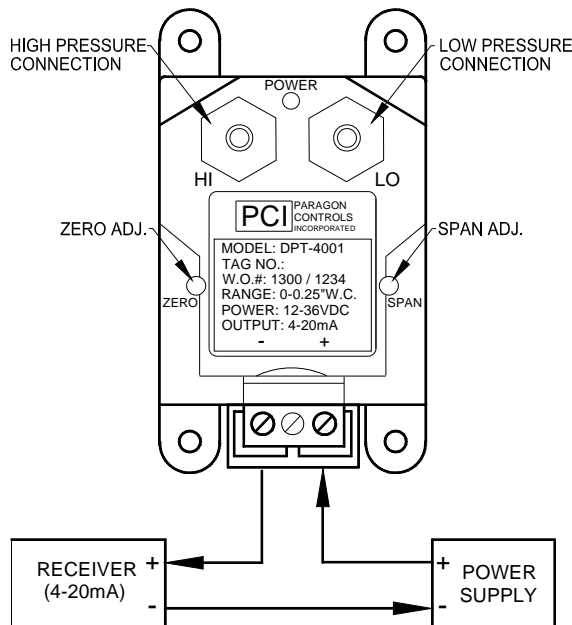
This user manual provides information on product features and guides you through all the basic functions of the DPT-4001.

## 1.1. DESCRIPTION

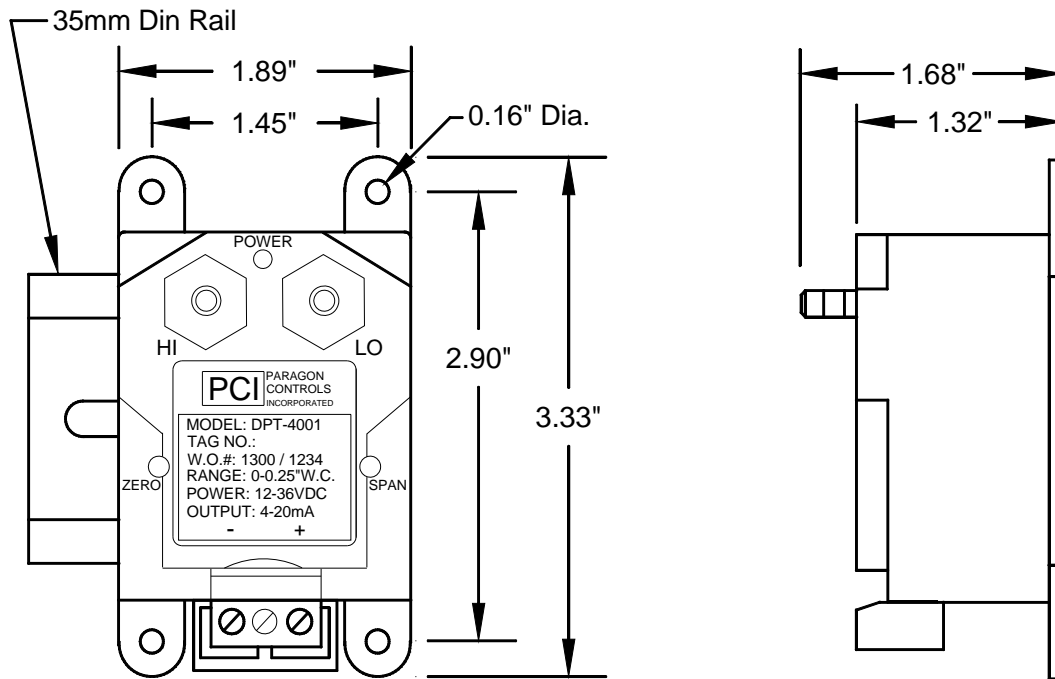
The **DPT-4001** differential pressure transducer sensor operates on the capacitance principal and is capable of sensing ultra low differential pressures. In the capacitance cell, a very lightweight, responsive diaphragm deflects a small amount when pressure is applied. This deflection results in a change in capacitance, which is then detected and processed electronically into an output signal linear to the differential pressure. The DPT-4001 can be configured as a Unipolar device (positive differential pressure only) or a Bipolar device (positive and negative differential pressures). A power indicator illuminates when power is attached correctly.

### 1.1.1. Field Connections & Output Load Limitations

Refer to figure below for pressure and electrical connections. Use the chart shown below to determine load limitations verses loop power supply values.



### 1.1.2. Dimensions



(Mount with #8 screws or 35mm Din Rail)

## 2. CALIBRATION

It is recommended that the Zero Calibration be performed upon installation. Span Calibration is not affected by the Zero Calibration. The Span of the unit has been factory calibrated and should only be adjusted using high accuracy test equipment. **Refer to section 1.1.1.**

Zero Calibration Equipment Required:

- DMM (Digital Multi Meter)

Span Calibration Equipment Required:

- Low pressure air source (Paragon PS-100 or equivalent)
- Manometer for measuring low pressure
- DMM (Digital Multi Meter)

### 2.1. UNIPOLAR ZERO CALIBRATION

The following zero calibration procedure can be performed without the need to perform a span calibration.

- Step 1. Place a DMM set to current in series with the output between the DPT (-) and the Receiver (+).
- Step 2. Apply power to the DPT.
- Step 3. Identify **ZERO** potentiometer.
- Step 4. With no pressure applied, adjust the **ZERO** potentiometer for a reading of  $4\pm.01\text{mA}$ .

### 2.2. BIPOLAR ZERO CALIBRATION

The following zero calibration procedure can be performed without the need to perform a span calibration.

- Step 1. Place a DMM set to current in series with the output between the DPT (-) and the Receiver (+).
- Step 2. Apply power to the DPT.
- Step 3. Identify **ZERO** potentiometer.
- Step 4. With no pressure applied, adjust the **ZERO** potentiometer for a reading of  $12\pm.01\text{mA}$ .

### 2.3. SPAN CALIBRATION

*Note: It is recommended that a zero calibration be completed before performing a span calibration.*

#### 2.3.1. Output Procedure

- Step 1. Place a DMM set to current in series with the output between the DPT (-) and the Receiver (+).
- Step 2. Apply loop power to the DPT.
- Step 3. Identify **SPAN** potentiometer.
- Step 4. Apply full scale pressure (Range shown on the transducer label) to the High Pressure port and adjust the **SPAN** potentiometer for an output reading of  $20\pm.01\text{mA}$ .

### 3. TROUBLESHOOTING GUIDE

<b>TROUBLESHOOTING TABLE</b>	
<b>SYMPTOM</b>	<b>SOLUTION</b>
1. No output reading	1. Verify Power Supply voltage is correct
	2. Verify correct wire connections
	3. Verify correct pressure connections
	4. Verify input pressure differential with a manometer
	5. Contact Factory Service Department.
2. Low output reading	1. Verify Receiver load resistance (See section 1.1.1)
	2. Verify input pressure differential with a manometer
	3. Contact Factory Service Department.

